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AMSAT NEWS SERVICE
ANS-286

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-286.01
ANS-286 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 286.01
From AMSAT HQ SILVER SPRING, MD.
October 13, 2013
To All RADIO AMATEURS
BID: $ANS-286.01

AMSAT Celebrates 30th Anniversary of Amateur Radio Involvement in Human Spaceflight

The 31st Annual AMSAT Space Symposium and Annual Meeting takes place 1-3 NOV 13 at the Houston Marriott South at Hobby Airport. Details about the Symposium
may be found on AMSAT website (www.amsat.org). Deadline for reserving rooms under the AMSAT Block is Wednesday, 16 OCT 13. Time is running out; reserve
your room directly with the hotel and register for the Symposium, the banquet,

and special tours on the AMSAT website! Note: the special tour of Johnson Space Center scheduled for Monday, 4 NOV is booked and reservations are closed.
All Symposium activities online reservations will close 25 OCT 2013.

A special highlight of this year's Symposium is the celebration of the 30th anniversary of amateur radio involvement in human space flight and the evolution of amateur radio into a successful program on board the International
Space Station. ARISS (Amateur Radio on the ISS) is an international program that supports educational outreach as well as provides an opportunity for informal contacts between astronauts/cosmonauts and amateur radio operators around the world. The recent delivery of "Ham TV" equipment to the Columbus module by the European Space Agency is a reflection of the continued support that amateur radio holds for communicating with students.

Astronaut Owen Garriott, W5LFL on STS-9 in November 1983 was the first astronaut to utilize amateur radio to communicate with personnel on the ground,
allowing the general public to speak with US astronauts from space, outside the
communication channels of NASA's Mission Control. In recognition of the 30th
anniversary of this historic event, a multi-media panel featuring Owen and other key individuals who initiated this amazing program will take place on Saturday evening as part of the banquet, moderated by AMSAT VP-Human Space Flight Frank Bauer, KA3HDO. The presentation includes not only remarks by Owen
and others in response to Frank's questions, but video highlights of amateur radio participation in STS-9 and other Shuttle flights will be shown. Having
such a celebration take place in Houston makes it more special as it allows us
to have non-AMSAT personnel involved with placing amateur radio on the Shuttle
and ISS participate in our special program.

Those that attended the 29th AMSAT Space Symposium that took place in San Jose, CA in November 2011 were treated to an amazing presentation as we celebrated the 50th anniversary of OSCAR-1 (launched on 12 DEC 61), with Project OSCAR and AMSAT member Lance Ginner, K6GSJ telling the story of the development and launch of OSCAR-1 with slides and his recollections of how OSCAR-1 was built and installed on the launch vehicle. Likewise, this year's banquet provides a special opportunity to "meet history" as attendees hear directly from those that initiated amateur radio into human space flight.

Come to Houston and help celebrate a significant event in amateur radio history!

[ANS thanks Martha at the AMSAT Office for the above information]

Keith Baker, KB1SF / VA3KSF signs off with final column for "Monitoring Times"

As has been well publicized, Grove Enterprises will stop publishing "Monitoring Times" after the December 2013 issue. AMSAT's own Keith Baker, KB1SF / VA3ksf submited the last installment of his regular column "Amateur Satellite Update" in the November 2013 issue, which is now available. Keith's
article begins on page 46. He discusses UKube-1, FUNcube-1 and Fox-1a. Keith

sign's off saying "..., it’s been a real pleasure sharing learning with you these past few years." and then invites his readers to join and support their respective national AMSAT societies.

[ANS thanks E. Michael McCardel, KC8YLD, for the above announcement]

Hams Collaborate to Greet Juno Spacecraft on Flyby; Results Are Pending

Radio amateurs around the globe greeted NASA's Juno spacecraft October 9 as it looped past Earth for a gravity-assisted boost on its way to Jupiter. Participants were invited to spread out across 10 meters to transmit "HI" in very slow speed CW (1/25 WPM), sending 30 second dits punctuated by 30 second spaces and 90 seconds between the two characters. The experiment involved 16 identical rounds or cycles and ran a bit longer than 2-1/2 hours all told (1800 to 2040 UTC). The object of the experiment was to see if Juno's onboard "Waves" experiment would be able to detect the collective RF. One possible glitch was that the spacecraft's systems went into "safe mode" at some point. University of Iowa researcher and Waves Principal Engineer Don Kirchner, KDØL, believes the unexplained switchover will not prove to be a problem for the "Say 'HI' to Juno" experiment.

"Safe mode entry was late enough that we likely have data taken from the event," Kirchner told ARRL. "[Project managers] are carefully working through their standard procedures, which take priority over downlinking the science telemetry that should be stored on board. I am still hopeful that we will have enough data to determine whether or not our instrument was able detect amateur signals."

Among stations participating were operators at the Virginia Tech Amateur Radio Club's K4KDJ, who posted video of their activity on YouTube.

Whatever the outcome, Kirchner said, he and the Juno team would like to thank the operators who took part in the experiment. He said reports came in from all over the world. Anyone who took part can request a QSL card that acknowledges their help.

"Indications are that we had very large and enthusiastic participation," he added.

At the time of the experiment the Juno spacecraft was within 50,000 kilometers from Earth, and the Waves team determined that would be the best opportunity for the wide-band receiver to detect Amateur Radio signals. Spreading out participants on a wide range of 10 meter frequencies was intended to improve the chance of the Waves instrument's hearing the ham signals. The

detector has
a bandwidth of 1 MHz.

"The natural signals we expect to measure at Jupiter will consist of a large number of discrete tones," a pre-experiment announcement explained, "so spreading the signals out in this manner is a good approximation to the signals
we expect to detect. But at Jupiter, we don't expect to be able to decode CW in
our telemetry!"

Despite the government shutdown two websites were available to guide participants when to key down and when to stop transmitting. Numerous operators
were monitored who, apparently not having read or fully understood the instructions, transmitted "HI" and their call signs at normal CW speeds. The very slow speed CW was necessary because the Waves instrument samples the spectrum just once per second. As the website explained, "By spreading the signal out in time, we can average to reduce the noise level. In addition, the
spacecraft spins at 2 RPM, so a 30 second 'dit' time gives us a full spin to see if there is any spin modulation."

Organizers were actually hoping for poor conditions on 10 meters, so that signals from Earth would pass through the ionosphere for the most part, allowing the spacecraft a better chance of detecting them.

The Jet Propulsion Laboratory's Say "HI" to Juno web page and the Southwest Research Institute's Say "HI" to Juno Event website will report the results of
the experiment.

[ANS thanks the ARRL Letter -- Oct. 10, 2013 for the above information]

SkySat-1 & SkySat-2 being shipped to Russia for upcoming launch

Space News reports SkySat-1 and SkySat-2 being shipped to Russia for upcoming
launch.

http://www.spacenews.com/article/civil-space/37671skybox-imagings-hopes-high-as-launch-of-first-satellites-draws-near

Skybox’s satellites weigh approximately 100 kilograms and are slightly larger
than the miniature refrigerators often found in college dormitory rooms. Although the satellites dwarf the 1-kilogram cubesats many of the firm’s executives, including founders Berkenstock and Julian Mann, worked on in the Stanford laboratory – their professor at Stanford, Bob Twiggs, helped to invent
the tiny spacecraft – the CubeSat approach is readily apparent at Skybox headquarters. The Skybox design team created satellites capable of gathering 1-
meter resolution imagery while eschewing costly features that would raise the
price of each satellite.

[ANS thanks the Space News and Greg, W9GB for the above information]

RSGB Centenary Convention October 11-13, 2013

The RSGB's Centenary Convention, generously sponsored by Martin Lynch & Sons,
is scheduled over the weekend 11th –13th October 2013 at Horwood House just a
few miles outside Milton Keynes.

LECTURES.
Some of the highlights are…

JOE TAYLOR, K1JT. Joe is a Nobel Prize winner and is very well known in the
field of amateur radio weak signal communication. He will be speaking on DXing
with weak signals, which is sufficiently broad to allow an overview of both HF
and EME related applications. His amateur radio feats have included mounting an
'expedition' in April 2010 to use the Arecibo radio telescope to conduct
moonbounce with amateurs around the world using voice, Morse code and digital
communications. He's written several computer programs and communications
protocols, including WSJT (Weak Signal/Joe Taylor), a software package and
protocol suite useful for passing short messages via non-traditional radio
communications methods, such as moon-bounce and meteor scatter and other low
signal-to-noise ratio paths. It is also useful for extremely long distance
contacts using very low power transmissions.

TUVALU T2GM. Tom Wylies, GM4FDM is one of the four Scottish amateurs who
recently headed to Tuvalu to operate as T2GM. He has kindly agreed to give us
an insight to, amongst other things, the troubles they encountered getting to
Tuvalu. If you recall they made over 18,000 contacts working UK on 15m through
to 40m, which was a great feat transiting the auroral oval right over the North
Pole.

EASTER ISLAND XR0YG. Michael Wells, G7VJR will be giving a presentation on his
venture to Easter Island where he and his colleagues operated as XR0YG in
March, on all bands 160m through to 10m – CW only. Electricity on Easter Island
was subject to frequent blackouts, which caused a few problems, but after six
days on the air they'd made some 24,000 QSOs.

WWI COMMUNICATIONS. Dr Elisabeth Bruton is a postdoctoral researcher on a
collaborative project looking at telecommunications in WWI and how quickly
development in radio was made at that time. Others involved in this project are
the University of Leeds and the Museum of the History of Science, Oxford, BT
archives, IET archives, Porthcurno Telegraph Museum and the Science Museum.
Elisabeth has kindly agreed to come and speak at the Convention. You may have
heard Elisabeth recently taking part in the Radio 4 series "In our Time" hosted
by Melvyn Bragg. Elisabeth was one of the three contributors to the edition
broadcast on 4 July entitled "The Invention of Radio".

DUD CHARMAN'S AERIAL CIRCUS. Continuing the historic theme, Terry Giles,

G4CDY
will be giving a demonstration of his recreation of G6CJ, Dud Charman's
Aerial
Circus. Some Members will have seen this demonstrated at the recent
Centenary
Day celebrations at Bletchley Park, where Terry gave his lecture twice to
packed rooms.

RASPBERRY Pi. One of the most successful lectures at last year's event was
Peter Goodall, 2E0SQL's sessions on Raspberry Pi. I'm pleased to confirm
that
Peter has agreed to give another presentation at this year's event,
which will
be complimented by a presentation by Eben Upton, the founder of the
Raspberry
Pi Foundation. Eben will also be part of the judging panel for the Centenary
Construction Competition that's being judged at this year's Centenary
Convention.

SAM JEWELL, G4DDK. Sam will be presenting a modern 70MHz transverter. At
times
of high Sporadic-E activity, signal levels encountered on the 70MHz (4m)
band
can be extremely high, especially Eastern European OIRT FM broadcast
stations.
To reduce intermodulation and blocking, equipment for this band must have a
high dynamic range receiver. Transmit signals should also be clean to avoid
interference to other services. This talk describes a modern transverter
design
for the radio amateur to build that meets these requirements.

CHRIS MOULDING, G4HYG. Chris will be talking about the recent
developments of
the Sentinel HF SDR noise measurement receiver and an HF active antenna,
looking at how to get accurate RF noise measurements in an amateur radio
station without spending large sums on professional test equipment. The talk
will also cover SDR receiver design and a novel HF antenna designed to
minimise
the effects of local RF noise in a typical amateur station.

UK LICENCE EXAMINATIONS. As in previous years, the RSGB will be offering
anyone wishing to obtain a UK amateur radio licence the opportunity to
complete
one or more of RCF Examinations over the weekend. All candidates must book
their exams prior to the event and, as normal, have to provide evidence that
they've completed the required practical assessments. Candidates for the
Foundation and Intermediate exams must contact the exams co-ordinator
beforehand so that their progress as regards the practical assessments
can be
verified. Contact the RCF Department at RSGB HQ on 01234 832 700 for further
information and booking the examinations. If required, advice can be
given or
help finding a local tutor to complete the practical assessments in
advance of
the Convention weekend.

US EXAMINATIONS. The US exams will be available on Sunday 13th. Candidates
will need some form of ID, preferably hoto ID, a pen, a US postal
address for
the FCC to send your licence to and the exam fee (currently the Sterling
equivalent of $15). The whole of the US exam question pool is available
in the
public domain and can be downloaded. There are many websites that have
practical papers with answers and (for self study candidates) there are many

books available.

[ANS thanks AMSAT-UK, and RSGB for the above information]

STRaND-1 talk at RSGB Convention this Sunday, October 13, 2013

Dr Chris Bridges M6OBC / M0GKK of the Surrey Space Centre is one of the volunteers who developed the UK's first CubeSat STRaND-1 on 437.568 MHz.At 11:30 on Sunday, October 13 he will be providing an update on the satellite to those attending the RSGB Convention near Milton Keynes.

Launched on February 25, 2013 STRaND-1 was the first satellite to carry a Smartphone into space and attracted world-wide media interest.

At the heart of STRaND-1 is a Google Nexus One smartphone with an Android operating system. Smartphones contain highly advanced technologies and incorporate several key features that are integral to a satellite – such as cameras, radio links, accelerometers and high performance computer processors –
almost everything a spacecraft needs except the solar panels and propulsion.

STRaND-1 information
http://amsat-uk.org/satellites/strand-1/

[ANS thanks AMSAT-UK, for the above information]

Raspberry Pi at RSGB Convention

Peter Goodhall 2E0SQL, a well known amateur radio satellite operator, is scheduled to give a presentation on the Raspberry Pi computer board at the RSGB
Convention this weekend.

The popular Raspberry Pi has been used for many different amateur radio applications. Peter's presentation is scheduled to be given at 14:30-15:15 on
Saturday, October 12.

The RSGB's Centenary Convention, sponsored by Martin Lynch & Sons, takes place
this weekend (Fri eve-Sun) October 11-13 at Horwood House, MK17 0PH just a few
miles outside Milton Keynes

[ANS thanks AMSAT-UK, for the above information]

AMSAT-UK FUNcube-1 Presentation at RSGB Convention

Dave Johnson G4DPZ is scheduled to be giving a presentation on the amateur radio AMSAT-UK FUNcube-1 and UK Space Agency (UKSA) UKube-1 satellites to the
RSGB Convention on Saturday, October 12.

The presentation is scheduled to take place from 16:45-17:30 in the Cook 2 room
at Horwood House, MK17 0PH on Saturday, October 12.

FUNcube-1 carries a 435/145 linear transponder for SSB and CW communications and an educational telemetry beacon using 1k2 BPSK for school outreach purposes.

Ukube-1 carries a set of AMSAT-UK FUNcube boards that will provide an additional 435/145 MHz linear transponder and educational telemetry beacon.

The current launch information has lift off for FUNcube-1 scheduled for late November and UKube-1 on February 20.

FUNcube-1 communication subsystem:
• 400 mW Inverting linear transponder for SSB and CW
- Uplink 435.150 – 435.130 MHz
- Downlink 145.950 – 145.970 MHz
• 400 mW BPSK Telemetry 145.935 MHz

UKube-1 communications subsystem:
• Telemetry downlink 145.840 MHz,
• FUNcube subsystem beacon 145.915 MHz
• 400 mW Inverting linear transponder for SSB and CW
- Uplink 435.080 -435.060 MHz
- Downlink 145.930 -145.950 MHz
• S Band downlink 2401.0 MHz
• myPocketQub 437.425-437.525 MHz

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this weekend (Fri eve-Sun) October 11-13 at Horwood House, MK17 0PH just a few
miles outside Milton Keynes.

[ANS thanks AMSAT-UK, for the above information]

ARISS News

Upcoming ARISS Contact Schedule as of 2013-10-09 17:00 UTC

Quick list of scheduled contacts and events:

S. K. Seri Suria, Bangsar, Selangor, Malaysia, direct via 9M2RPN
Contact was successful: Wed 2013-10-09 09:31:14 UTC 80 deg

Ecole Francaise Jacques Prevert, Saly, Senegal, direct via 6V7SPACE
Contact is a go for: Mon 2013-10-14 16:31:33 UTC 30 deg

Istituto Comprensivo, Marzocchino Di Seravezza, Italy and Comprensivo Camaiore 3, Camaiore, Italy, direct via IQ5VR
Contact is a go for: Sat 2013-10-19 15:54:53 UTC 33 deg

ARISS is requesting listener reports for the above contacts. Due to issues with the Kenwood radio that are not fully understood at present, the Ericsson radio is going to be used for these contacts. ARISS thanks everyone
in advance for their assistance. Feel free to send your reports to aj9n(a)amsat.org or aj9n(a)aol.com.

Looking for something new to do? How about receiving DATV from the ISS? If interested, then please review the document provided by Gaston Bertels ON4WF, the ARISS-Europe Chairman.

http://www.amsat.org/amsat/ariss/news/HamTV.pdf

The webpages listed below were all reviewed for accuracy. Out of date webpages were removed and new ones have been added. If there are additional
ARISS websites I need to know about, please let me know.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.
All dates and times listed follow International Standard ISO 8061 date and time format YYYY-MM-DD HH:MM:SS
The complete schedule page has been updated as of 2013-10-09 17:00 UTC.

Here you will find a listing of all scheduled school contacts, and questions, other ISS related websites, IRLP and Echolink websites, and instructions for any contact that may be streamed live.
http://www.amsat.org/amsat/ariss/news/arissnews.rtf

Total number of ARISS ISS to earth school events is 858. (***)
Each school counts as 1 event.
Total number of ARISS ISS to earth school contacts is 840. (***)
Each contact may have multiple schools sharing the same time slot.
Total number of ARISS supported terrestrial contacts is 46.

A complete year by year breakdown of the contacts may be found in the file.
http://www.amsat.org/amsat/ariss/news/arissnews.rtf

US Hams, don’t forget that there is a new process for US school proposals.
For US schools to have an ARISS contact, they must fill out a proposal, submit it to NASA, and see if they are approved or not. Once a school is approved and put on the list, an ARISS mentor will be assigned to assist the
school.

NASA will have two open windows a year for schools to submit a proposal. The window for contacts during the second half of 2012 has already closed. Look for the window for first half 2013 contacts later this year. You must go through NASA to get the proposal material. Contact Teaching From Space, a NASA Education office, at JSC-TFS-ARISS(a)mail.nasa.gov or by calling
them at (281) 244-2320.

The following US states and entities have never had an ARISS contact: Arkansas, Delaware, Kansas, North Dakota, Rhode Island, South Dakota, Vermont,
West Virginia, Wyoming, American Samoa, Guam, Northern Marianas Islands, and the Virgin Islands.

IN LIGHT OF SOME COMMENTS THAT HAVE APPEARED RECENTLY ON THE VARIOUS BULLETIN
BOARDS; THE COMMENTS BELOW STILL HOLD TRUE:

QSL information may be found at:
http://www.arrl.org/ARISS/arissfaq.html
http://www.rac.ca/ariss/oindex.htm#QSL's

ISS callsigns: DPØISS, NA1SS, OR4ISS, RSØISS

The successful school list has been updated as of 2013-10-09 17:00 UTC.

http://www.amsat.org/amsat/ariss/news/Successful_ARISS_schools.rtf

Frequency chart for packet, voice, and crossband repeater modes showing Doppler correction as of 2005-07-29 04:00 UTC
http://www.amsat.org/amsat/ariss/news/ISS_frequencies_and_Doppler_correction.rtf

Listing of ARISS related magazine articles as of 2006-07-10 03:30 UTC.
http://www.amsat.org/amsat/ariss/news/ARISS_magazine_articles.rtf

Check out the Zoho reports of the ARISS contacts

ARISS School Contacts
https://reports.zoho.com/ZDBDataSheetView.cc?DBID=412218000000020415

Successful ARISS contacts
https://reports.zoho.com/ZDBDataSheetView.cc?OBJID=412218000000023448

Additional Zoho links may be found at
http://www.amsat.org/amsat/ariss/news/arissnews.rtf

Exp. 36/37 on orbit
Fyodor Yurchikhin RN3FI
Karen L. Nyberg
Luca Parmitano KF5KDP

Exp. 37/38 now on orbit
Oleg Kotov
Sergey Ryazansky
Michael S. Hopkins KF5LJG

ARISS is an international educational outreach program partnering the participating space agencies, NASA, Russian Space Agency, ESA, CNES, JAXA, and
CSA, with the AMSAT and IARU organizations from participating countries.

ARISS offers an opportunity for students to experience the excitement of Amateur Radio by talking directly with crewmembers on-board the International
Space Station. Teachers, parents and communities see, first hand, how Amateur
Radio and crewmembers on ISS can energize youngsters' interest in science, technology, and learning. Further information on the ARISS program is available
on the website http://www.ariss.org/ (graciously hosted by the Radio Amateurs
of Canada).

[ANS thanks Charlie Sufana, AJ9N for the above information]

Satelite Shorts From All Over

AMSAT's Patrick Stoddard, WD9EWK was at the Mohave Amateur Radio Club's annual
hamfest in Kingman, Arizona, on Saturday (12 October 2013).
His plan was to have WD9EWK on as many satellite passes as possible during the
hamfest for on-air demonstrations of satellite operating. The hamfest site
is in grid DM25xf, in Mohave County AZ.

Since Kingman is near a couple of grid boundaries, he planned on driving to one
of those boundaries after the hamfest for some passes on Saturday afternoon
and early evening (early Sunday, 13 October, UTC time) before driving home.
The DM25/DM35 grid boundary isn't too far from the hamfest site,
running through the east side of Kingman. The DM24/DM25 grid boundary is about
20 miles/32km south of Kingman along I-40 He planned to operated from both of
these grid boundaries.
For a QSL card all QSOs should be uploaded to Logbook of the World, or you can
e-mail him with the QSO details if you made a contact.
If you are in the log, you will get a card.

http://www.wd9ewk.net/

[ANS thanks Patrick WD9EWK/VA7EWK, for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the
President's Club. Members of the President's Club, as sustaining
donors to AMSAT Project Funds, will be eligible to receive addi-
tional benefits. Application forms are available from the AMSAT
Office.

Primary and secondary school students are eligible for membership
at one-half the standard yearly rate. Post-secondary school students
enrolled in at least half time status shall be eligible for the stu-
dent rate for a maximum of 6 post-secondary years in this status.
Contact Martha at the AMSAT Office for additional student membership
information.

73,
This week's ANS Editor,
Joe Spier, K6WAO